

Answers to Extra Practice/Review - Alg2B 2015-2016

Linears

1) $\begin{array}{c|c} x & y \\ \hline -2 & -2 \\ 0 & 4 \\ 1 & 7 \end{array}$ $m = \frac{6}{2} = \frac{3}{1} = 3$ $b = 4$ $\boxed{y = 3x + 4}$

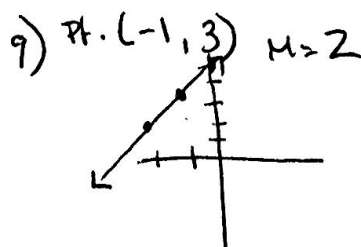
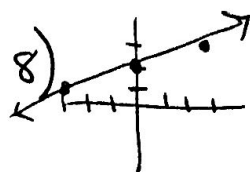
2) $b = 10$ $m = \frac{-1 - 10}{2 - 0} = \frac{-11}{2}$ $\boxed{y = -\frac{11}{2}x + 10}$

3) $129.25 = 7.95x + 10$
 $\begin{array}{r} 129.25 \\ -10 \\ \hline 119.25 \end{array} \quad \begin{array}{r} 7.95x \\ -10 \\ \hline 7.95 \end{array}$ $\boxed{x = 15 \text{ shirts}}$

- 4) A. # of orders / products to make that week
 B. # of products she can make each day

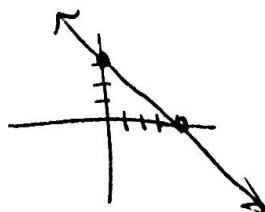
5) $300 = 30n - 270$
 $\begin{array}{r} 300 \\ +270 \\ \hline 570 = 30n \end{array}$ $\boxed{n = 19 \text{ games}}$

6) $2.1 + 0.25x = 3 + 0.1x$
 $2.1 + .15x = 3$
 $.15x = 0.9$
 $x = 6$
 $2.1 + .25(6) = \boxed{\$3.60}$



7) $a + 5 = 105$
 $7a + 5.55 = 630$

10) $3(6) + 4y = 12$
 $y = 3$
 $3x + 4(0) = 12$
 $x = 4$



FACTORIZING

$$1) (x-5)(x-4) \quad \begin{array}{r} -20 \mid 9 \\ \hline \end{array}$$

$$2) \frac{(x+5)(x+1)}{(x-4)(x+1)} = \frac{x+5}{x-4}$$

$$3) (3x-1)(x+4)$$

$$4) \frac{2(x^2+10x+21)}{2(x+7)(x+3)}$$

$$5) 4xy(3y-x)$$

$$6) a^3 - 4a^2 + 3a - 12$$
$$a^2(a-4) + 3(a-4)$$

$$(a^2+3)(a-4)$$

$$7) (5n-12)(5n+12)$$

$$\underline{i}$$

$$1) (7+i)(4-2i)$$

	7	i
4	28	4i
-2i	-14i	-2i ²

$$28 - 10i - 2(-1)$$

$$28 - 10i + 2$$

$$\boxed{30 - 10i}$$

$$2) \sqrt{-49} = 7i$$

$$3) 10 + 3i + 5 - 7i = \boxed{15 - 4i}$$

$$4) (\sqrt{10-3x})^2 = (2i)^2$$

$$10 - 3x = 4i^2 = 4(-1) = -4$$

$$\begin{array}{r} 10 - 3x = -4 \\ -10 \quad -10 \\ \hline -3x = -14 \end{array}$$

$$x = \frac{14}{3} = 4.\bar{6}$$

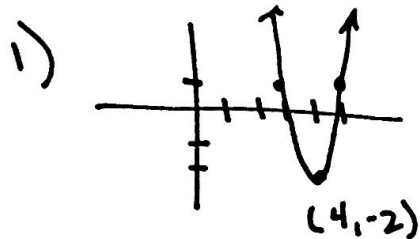
$$5) g(3i) = (3i)^2 = 9i^2 = 9(-1) = \boxed{-9}$$

$$6) x^2 + 25 = 0$$

$$\begin{array}{r} -25 \quad -25 \\ \hline \sqrt{x^2} = \sqrt{-25} \end{array}$$

$$\boxed{x = \pm 5i}$$

QUADRATICS



2) A. $(-4, -1)$ B. $x = \frac{-(-8)}{2(1)} = \frac{8}{2} = 4$ $f(4) = 4^2 - 8(4) + 3$
 $= 16 - 32 + 3 = -13$
 $\boxed{(4, -13)}$

3) $y = x^2 - 8x - 20$

$(x - 10)(x + 2) = 0$

$x - 10 = 0$

$x + 2 = 0$

$x = 10$

$x = -2$

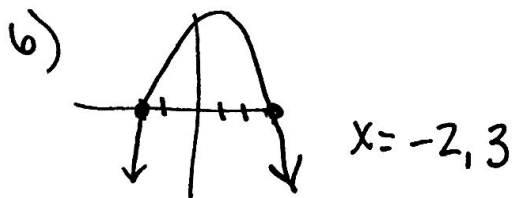
4) $x = \frac{-8 \pm \sqrt{8^2 - 4(3)(-7)}}{2(3)}$

$= \frac{-8 \pm \sqrt{64 + 84}}{6} = \frac{-8 \pm \sqrt{148}}{6}$

$= \frac{-8 \pm 12.17}{6} \rightarrow \frac{-8 + 12.17}{6} = \frac{4.17}{6} = 0.78$

$\rightarrow \frac{-8 - 12.17}{6} = -3.36$

5) $f(0) = 2(0)^2 - 12(0) + 5 = 5$ $\boxed{(0, 5)}$



7) A. $y = -4(x+1)^2 - 3$
 reflected over x
 skinnier
 left 1
 down 3

B. $y = \frac{1}{4}x^2 + 6$
 wider
 shift up 6

8) $h(2) = -9.8(2)^2 + 500$
 $= -39.2 + 500 = \boxed{460.8 \text{ ft}}$

EXPONENTIALS

1) A. $2^{3x-5} = 16 = 2^4$

$$3x-5=4$$

$$3x=9$$

$$\boxed{x=3}$$

B. $7^{x+4} = 7^{3x-2}$

$$\begin{array}{c} x+4 \\ -x \end{array} = \begin{array}{c} 3x-2 \\ -x \end{array}$$

$$4 = 2x - 2$$

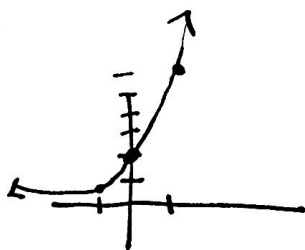
$$6 = 2x$$

$$\boxed{x=3}$$

2) $5^{-1} = \frac{1}{5}$ $8^0 = 1$

3) $y = 2 \cdot 3^x$

x	y
-1	2/3
0	2
1	6



4) A.

x	y
-1	2.3
0	7
1	21

$$7 = a$$

$$21 = a \cdot 3 = b$$

$$\boxed{y = 7 \cdot 3^x}$$

B. $(0, -4)$ $(1, -12)$
 $a = -4$ $b = x^3$

$$\boxed{y = -4(3)^x}$$

5) B.

6) $a = 10,000$ $b = 100\% - 10\% = 90\% \Rightarrow 0.90$

$$y = 10,000 (0.9)^x$$

7) A. Decay B. Growth C. Decay

LOGS

1) $\log_5 125 = 3$

2) $2^5 = 32$

3) A. $\log_3 9 = x$

$$3^x = 9$$

$$x = 2$$

B. ~~$\log 15$~~ $\log 15$

4) A. $\log_4 x = 3$

$$4^3 = x$$

$$x = 64$$

B. $\log_3 7 + \log_3 x = 6$

$$\log_3 7x = 6$$

$$3^6 = 7x$$

5) A. $\log 5 \cdot 4$
 $\log 20$

B. $\log 10 - \log 2$
 $\log \frac{10}{2}$
 $\log 5$

C. $3 \log 2$
 $\log 2^3$
 $\log 8$